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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/643,037	08/18/2003	Reginald Beer	GB920020042US1	3242
28722	7590	05/15/2006	EXAMINER	
BRACEWELL & PATTERSON, L.L.P.			CHEN, ALAN S	
P.O. BOX 969			ART UNIT	
AUSTIN, TX 78767-0969			PAPER NUMBER	
			2182	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2005.
 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,7 and 32-35 is/are pending in the application.
4a) Of the above claim(s) 32-35 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to the pending claims have been considered but are moot in view of the new ground(s) of rejection.
2. It should be noted that while the amended claims, particularly claim 1, indeed contain features/limitations of claims 3, 5 and 6, the claims matter is not identical between the amended claim 1 and the original claims. For instance, the applicant now distinctly specifies what the three-line bus consists of, i.e., a data line, a clock line and an interrupt line.

Election/Restrictions

3. Newly submitted claims 32-35 are directed to inventions that are independent or distinct from the invention originally claimed for the following reasons:

This application currently contains claims directed to the following patentably distinct species of the claimed invention:

Species I: Claims 1,2,4 and 7 are directed to serial data bus operating using an I2C serial protocol, the serial bus being a three line bus;

Species II: Claims 32-34 are directed to serializing/deserializing serial bus utilizing a multiplexer that multiplexes addresses from a backplane and data from a serial bus;

Species III: Claim 35 is directed to responding to requests for ESI services by using a multiplexer and handling Fibre Channel addresses.

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4. The species are independent or distinct because they embody different operations using a SERDES. Restriction to one of the following inventions is required under 35 U.S.C. 121.

5. Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

6. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claim 32-35, belonging to Species II and III are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1,2,4 and 7 are rejected under 35 USC 103(a) as being unpatentable over US Pat. No. 6,636,922 to Bastiani et al. (Bastiani) in view of US Pat. No. 6,199,130 to Berglund et al. (Berglund) in further view of US Pat. No. 5,327,121 to Antles, II (Antles).

Bastiani discloses a disk drive enclosure for housing a plurality of disk drives (*Fig. 4c, host computer, element 102, intrinsically has a chassis which houses the card adapter, element 104; elements 106 are the disk drives*), the enclosure being arranged to provide enclosure services to the plurality of disk drives (*host transfers data to/from disk drives*), the enclosure comprising: an enclosure services processor (*Column 3, lines 3-10, system has CPU for data transfers between disks*) at least one disk drive arrangement including a disk drive (*Fig. 4C, elements 106*) and a serial adapter (*Fig. 3, element 118 is the serial adapter*) coupled non-serially thereto (*Fig. 3, disk drive, element 122 and 120, is in parallel*); a serial data bus (*Fig. 3, element 110*) coupled between the enclosure services processor (*CPU on host computer, element 102*) and

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the serial adapter (*Fig. 3, element 118*) wherein the serial adapter is arranged to communicate serially with the processor (*Fig. 3 and Fig. 4C show the ASP adapter, element 118 in serial communication with the host CPU, over the Advanced Serial Protocol, ASP host card*) and non-serially with the at least one respective disk drive (*Fig. 3, element 118, talks to disk drive, element 122, in parallel*), such that data is transferred therebetween. Bastani does not disclose expressly being able to operate the serial bust with I2C protocol.

Berglund teaches the I2C bus being an industry standard serial bus (*Column 4, lines 15+*).

Bastani and Berglund are analogous art because they are from similar problem solving area in communications between multiple disk drives using an adapter card (*Fig. 4, PCI adapter cards communicating with multiple disks*). Furthermore, Bastani discloses the ability to interface with SCSI drives and similarly, Berglund uses SCSI drives.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to conform with the I2C standard.

The suggestion/motivation for doing so would have been adopt an industry standard in order to be compatible with the various devices, taking advantage of the economy of scales associated with having multiple vendors designing around an industry standard. Bastani combined with Berglund does not disclose the serial bus being a three-line bus consisting of a data line, clock line and an interrupt line.

Antles discloses controlling multiple devices using only three lines, specifically a data line, clock line and an interrupt line (*Figs. 1 and 2, CK, D and Elx lines*)

Bastani, Berglund and Antles are analogous art because they are from similar problem solving area in interfacing multiple I/O devices, over a bus.

At the time of the invention it would have been obvious to a person of ordinary skill in the art to reduce communication to three lines.

The suggestion/motivation for doing so would be to simplify the design and significantly reduce the number of wires in a system with many I/O devices (*Column 1, lines 52+ of Antles*).

Therefore, it would have been obvious to combine Bastani, Berglund and Antles for the benefit of conforming to an industry standard in order to make available various I/O devices that operate on that standard, as well as to reduce the complexity of a large system of I/O devices by using a three-line bus design.

11. Per claim 2, Bastani, Berglund and Antles discloses claim 1, wherein Bastani further discloses the a single host adapter card interfacing with multiple hard drives (*elements 106*) thereby necessitating switching/addressing means to communicate between the hard drives. Bastani further discloses the ASP adapter (*Fig. 3, element 118*) performing serial to parallel conversion (*Fig. 3, element 120 is parallel bus while element 110 is a serial bus*).

12. Per claim 3, Bastani, Berglund and Antles discloses claim 1, wherein Bastani further discloses the adapter is a discrete element (*Fig. 3, element 118 is a chip*) between the disk drive (*Fig. 3, element 122*) and the enclosure (*host, element 102*).

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13. Per claim 7, Bastani, Berglund and Antles discloses claim 1, wherein Bastani further discloses the adapter is integrated with interfacing circuitry of the enclosure (*Column 6, lines 55-65 discloses "...current IDE manufacturers would be able to integrate the ASP into existing IDE devices by simply integrating the ASP chip 106a into their devices..."*).

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Patents and patent related publications are cited in the Notice of References Cited (Form PTO-892) attached to this action to further show the state of the art with respect to serial to parallel conversions in multiple I/O device environments.


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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S. Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim N. Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC
05/08/2006



KIM HUYNH
SUPERVISORY PATENT EXAMINER
5/10/06